



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,019	12/20/2001	Ralph H. Johnson	15436.436.3	6105
22913	7590	09/04/2007		
WORKMAN NYDEGGER 60 EAST SOUTH TEMPLE 1000 EAGLE GATE TOWER SALT LAKE CITY, UT 84111			EXAMINER NGUYEN, DUNG T	
			ART UNIT 2828	PAPER NUMBER
			MAIL DATE 09/04/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

TH

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/026,019	JOHNSON, RALPH H.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dung (Michael) T. Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3,5-7,9,14-16,18,21-30,33 and 34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14,24-30 and 33 is/are allowed.
- 6) ☒ Claim(s) 2,5-7,15,21,23 and 34 is/are rejected.
- 7) ☒ Claim(s) 3,9,16,18 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 2828

### OFFICE ACTION

The indicated allowed claims 21-23 are withdrawn due to the newly found prior art.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2, 5-7, 15, 21, 23, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsuda et al. (6399966).

Claims 21 and 23, Fig.6, Table 1, and col.11, 1.21-22 disclose an active region 406 comprising at least one quantum well with a thickness comprised of InGaAsN and including AlGaAs barrier layers sandwiching said at least one quantum well; and confinement layers 404 & 409 sandwiching said active region.

Claims 5-7, 34, Fig.6, Table 1, and col.11, 1.21-22 disclose an active region 406 further comprising at least one quantum well with a thickness and including barrier layers sandwiching said at least one quantum well, at least one of the quantum well and the barrier layers including nitrogen, wherein said at least one quantum well is further comprised of Sb;

upper and lower confinement layers 404 & 409 sandwiching said active region, wherein the barrier layers and/or the upper and lower confinement layers are comprised of material that

Art Unit: 2828

reduces a level of non-confining valence band discontinuity in the quantum well due to the presence of nitrogen in the quantum well (since Table 1 shows the presence of nitrogen in the QW, it is understood that the barrier layers and/or the upper and lower confinement layers must be comprised of material that reduces a level of non-confining valence band discontinuity in the quantum well due to the presence of nitrogen in the quantum well. Otherwise, the laser device would not work properly); and

a flattening layer 405 interposed between the lower confinement layer and the at least one quantum well.

Claim 2, Table 1 shows GaAsN barrier layers.

Claim 15, Table 1 shows InGaAs barrier layers.

***Allowable Subject Matter***

Claims 3, 9, 16, 18, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 14, 24-30, and 33 are allowed.

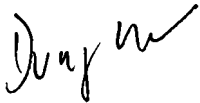
Art Unit: 2828

### **Communication Information**

**Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

**Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.**



**Michael Dung Nguyen**  
**Primary Examiner**

8/24/07